

The Future of Banking Services in the Era of Digital Financial Ecosystems

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ABSTRACT The rapid digital transformation of banking services is fundamentally changing the banking sector. This change is driven by new technologies such as artificial intelligence, blockchain, cloud computing and open banking platforms. Traditional banking models are becoming more agile and customer-centric systems. These systems are focused on seamless digital experiences, real-time services and data-driven decisions. This change has also led to the development of the digital finance ecosystem. This ecosystem is an integrated network in which financial and non-financial services, platforms and technology companies collaborate to deliver comprehensive and personalized value to users. It extends beyond traditional banking boundaries, incorporating fintech firms, technology providers, regulators and third-party service platforms. This article examines the future development of banking services within the context of this digital financial ecosystem. It also analyzes how banks can adjust their strategies, processes and business models to adapt to this environment. The study employs a qualitative research methodology that combines a systematic literature review with case studies of main digital banking platforms and financial institutions leveraging this ecosystem. The findings suggest that, in order to fully participate in the digital financial ecosystem, banks must adopt platform models, invest in innovative technologies and strengthen their strategic partnerships. Furthermore, regulatory compliance, cybersecurity and customer trust emerge as crucial factors for the sustainability of this ecosystem. This study expands upon existing research by presenting a conceptual framework for understanding ecosystem-driven banking innovation and offers practical insights into the path financial institutions should take in a complex and constantly evolving environment.

KEYWORDS

Blockchain
Cloud computing
Cybersecurity
Open banking
Digital banking technologies

INTRODUCTION

The global banking industry is experiencing major changes as digital technologies continue to change the way banking services are designed, delivered and consumed. Over the past decade, the rapid adoption of digital banking, online platforms and data-driven solutions has changed customer expectations. Today, customers want faster, more personalized and seamlessly connected banking services. Traditional banks, once known for their physical branches and standard services, are now required to become digital organizations. They need to operate successfully in a rapidly changing and highly competitive environment. This change is also due to the growth of fintech companies and technology firms. These companies provide innovative solutions and increase competition for traditional banks.

In this environment, the idea of a digital financial ecosystem has become an important model for the future of banking services. A digital financial ecosystem is a network of interconnected platforms, institutions and service providers. They collaborate together to provide a wide range of financial and non-financial services through a shared digital infrastructure. The ecosystem uses open banking, APIs (application programming interfaces)

and cloud technologies to support seamless collaboration between different participants. These include banks, fintech companies, regulators and customers. As a result, the boundaries between industries are becoming increasingly blurred. This shift is creating new business models focused on collaboration, platform development and shared value creation.

As the digital financial ecosystem becomes more important, questions arise about the role of banks in this changing environment. Banks need to rethink more than just the use of advanced technologies. They also need to consider their market positions, organizational structures and relationships with customers. At the same time, issues such as privacy, security, regulatory compliance and trust are becoming more complex. An interconnected ecosystem requires close collaboration between many different actors. This paper aims to examine the future of banking services in the era of the digital financial ecosystem. It also seeks to better understand the opportunities and challenges created by this transformation. By examining current trends, technological developments and new business models, the article intends to contribute to academic debates and support practical decision-making in the banking sector.

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LITERATURE REVIEW

Literature on the digital transformation of banking services emphasizes the growing importance of digital financial technologies as a main driving force behind structural changes in the banking sector. Fintech means improving or changing traditional financial services by using modern digital technologies such as artificial intelligence, blockchain, big data analytics and mobile platforms (Nguyen and Phong 2026). Fintech companies help improve efficiency, lower transaction costs and increase financial inclusion. At the same time, large technology companies possessing vast digital infrastructure and customer bases are entering the banking sector. They do this by adding banking services to their existing digital platforms. This trend is closely linked to the growth of the platform economy, where digital platforms act as intermediaries between different users and service providers. They enable value creation through scalable networks.

The shift from traditional banking to ecosystem-based banking represents a major change in how banking services are organized and delivered. Traditional banking models had vertically integrated structures, limited ways of interacting with customers and a product-centric approach. However, the development of open banking platforms and API-based infrastructure has enabled banks to become more collaborative and agile systems (Ghosh and Golder 2026). The ecosystem is a financial services model in which banks, fintech companies, third-party service providers and non-financial institutions operate together as an interconnected network. They deliver integrated services through a shared platform. This evolution reflects broad trends such as decentralization, interoperability, and customer-centric innovation.

Understanding the digital financial ecosystem requires various theoretical approaches. Platform theory explains value creation through multifaceted markets and network effects. It also suggests that digital platforms play a strategic role by coordinating activities within the ecosystem. Diffusion of innovation theory illustrates how new financial technologies are adopted over time by banks and customers. Furthermore, resource-based theory and dynamic capability theory demonstrate the importance of organizational adaptability, technological capability and strategic partnerships to achieve competitive advantage in a rapidly changing ecosystem. Institutional theory plays a crucial role in explaining the impact of regulatory frameworks and standards on the development and governance of digital financial systems (Akyildirim *et al.* 2025).

Although previous studies have examined banking digitalization, open banking, fintech collaboration and platform-based services, they have mostly examined these topics separately. Only a limited number of studies integrate these aspects into a single conceptual model of ecosystem banking. Existing frameworks have mainly focused on technological innovation or regulatory issues. They pay less attention to the relationship between technological infrastructure, ecosystem governance, strategic partnerships, customer value creation and sustainable performance.

The conceptual framework proposed in this study fills this gap by integrating technological, strategic, organizational and regulatory perspectives into a single analytical model. Unlike previous studies that have described ecosystem components in isolation, the proposed framework illustrates how digital technologies, ecosystem participants, governance mechanisms and customer-centric value creation work together to shape the future of banking services. As a result, the framework offers both theoretical integration and practical guidance. It helps banks transform from traditional service providers to ecosystem coordinators.

METHODOLOGY

This paper applies qualitative research methods to explore the transformation of banking services within the context of digital financial ecosystems. A systematic literature review was conducted, using recent academic studies, articles, and reports. The main academic sources were publications indexed in Scopus, Web of Science, ScienceDirect, and SpringerLink. Only peer-reviewed journal articles published between 2020 and 2026 were selected. This helped ensure that the study reflects recent developments in digital banking. Studies that focused solely on the software application and did not discuss banking digitalization were excluded. Greater attention was given to highly cited articles published in leading journals in the fields of banking, finance and digital innovation.

A thematic analysis was used to integrate data and case studies from the selected literature. Similar findings were grouped into common themes. These recurring themes were then incorporated into the conceptual framework presented in this study. The aim of this article is to explain the concept of ecosystem banking. It also aims to identify the role of main banking technologies, along with their benefits, challenges and risks. It also highlights future trends in banking ecosystems. The discussion section also provides recommendations for banks and regulators based on international experience. Here, the impact of ecosystem banking on customers and businesses are further highlighted. Although this article is largely based on secondary data sources, it provides a clear and detailed overview of the expected changes in banking services within digital financial ecosystems. It also discusses developments that are likely to occur in the near future.

RESULTS

Transformation of Banking Services

According to empirical and conceptual analyses, banking services are undergoing a major transformation. They are moving from a product-centric to a customer-centric model. Traditionally, banks focused on standardized financial products. However, with the growth of the digital ecosystem, value creation is now focused on providing a complete customer experience. This change is driven by higher customer expectations for convenience, speed and personalized services. This is also supported by increased competition from fintech companies and digital platforms. One of the main elements of this transformation is the delivery of personalized banking services through advanced data analytics (Figure 1). Banks can use customer data to predict customer needs, recommend relevant products and increase customer engagement through real-time decision-making (Chan *et al.* 2022).

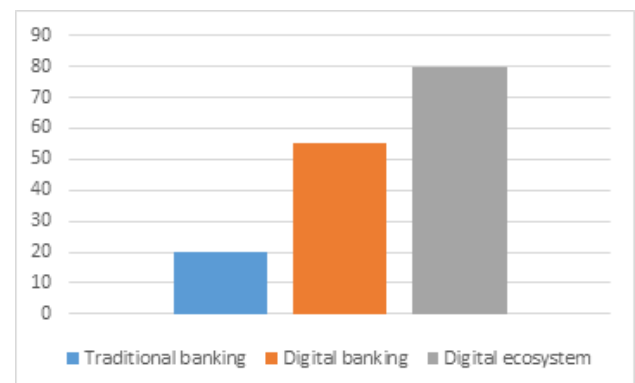


Figure 1 Degree of personalization by banking model

In addition, the growth of integrated financial services is changing the way people access and use banking services. Financial services are now seamlessly integrated with non-financial platforms. In particular, "super-applications" help increase customer loyalty. They also reduce dependence on separate platforms by integrating multiple services into a single digital interface.

The Role of Digital Technologies

The findings of this study highlight the important role of digital technologies in the implementation of ecosystem-based banking. Artificial intelligence (AI) is widely used to improve operational efficiency and support data-driven decision-making. It is particularly useful in credit scoring, fraud detection and automated customer service (Alnaser et al. 2023). AI-based systems allow banks to move from passive to proactive service delivery. As a result, they increase both efficiency and customer satisfaction (Table 1).

Table 1 Key technologies and their functions

Technology	Primary Function	Impact on Banking
AI	Predictive analytics, automation	Personalization, efficiency
Blockchain	Decentralized ledger	Security, transparency
Cloud Computing	Scalable infrastructure	Cost reduction, flexibility
Open Banking APIs	System integration	Innovation, collaboration

Blockchain technology increases trust and transparency within the digital ecosystem by providing secure and decentralized transaction records (Patel et al. 2022). This is especially important for cross-border payments, identity verification and smart contracts. Cloud computing provides the infrastructure needed for digital transformation. It supports rapid innovation and provides scalable, flexible and cost-effective solutions (Cheng et al. 2022). Furthermore, Open Banking APIs improve interoperability between ecosystem participants. They enable seamless service integration and encourage collaborative innovation.

Benefits of Ecosystem-Based Banking

Research shows that ecosystem-based banking creates significant value in several ways, as given in Figure 2.

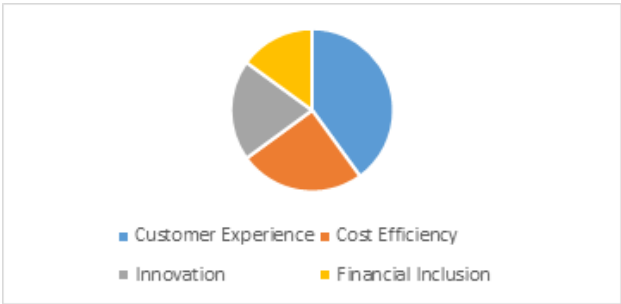


Figure 2 Benefits distribution

First, it significantly improves the customer experience by offering integrated, seamless and context-specific services. Customers

gain easier access to financial and non-financial services through a single interface. This also increases overall accessibility (Soyupak and Ipek 2025).

Second, ecosystem participation increases cost efficiency. Banks can reduce operational costs and use resources more efficiently by leveraging shared infrastructure, automation technologies and strategic partnerships (Calzada and Pablo 2026). Third, digital ecosystems promote financial inclusion by expanding services to underserved populations. These are people with limited access to banking services, especially in regions with high mobile phone usage (Ryan and Mukherjee 2026). Finally, collaboration among the various ecosystem participants accelerates innovation. It also supports the development and implementation of new products and services.

Challenges and Risks

Despite numerous advantages, the findings highlight several critical challenges and risks associated with the ecosystem-based banking (Table 2).

Table 2 Main challenges and implications

Challenge	Description	Implication
Cybersecurity	Increased attack surface	Higher operational risk
Data Privacy	Data misuse concerns	Loss of customer trust
Regulation	Fragmented legal frameworks	Compliance costs
BigTech Competition	Market dominance of tech giants	Reduced market share

Cybersecurity has become a major concern due to greater system interconnection and the expanding attack surface (Modesti et al. 2025). As banking services become more digital, the risk of data breaches, fraud and cyberattacks continues to increase. This highlights the need for strong security measures and continuous system monitoring.

Data protection is also a major challenge, as the ecosystem model relies heavily on the collection, sharing and analysis of vast amounts of customer data. Banks struggle to maintain customer trust while complying with data protection regulations. Furthermore, the ecosystem model increases regulatory complexity. This is because many different participants operate in different countries and legal frameworks (Horobets et al. 2025). Competition from technology companies further exacerbates these challenges. These companies have advanced technology, access to vast amounts of customer data and strong digital platforms. Their entry into the banking services market increases competitive pressure on traditional banks. As a result, smaller banks may face lower profits and the market may become more concentrated.

Regional Perspectives

The analysis reveals significant regional differences in the adoption and development of digital financial ecosystems. Developed markets have reached a high level of ecosystem maturity. This is supported by a robust technological infrastructure, effective regulatory frameworks and a high level of digital literacy among consumers. These factors encourage rapid adoption of innova-

tion and support the growth of ecosystem-based banking models (Figure 3).

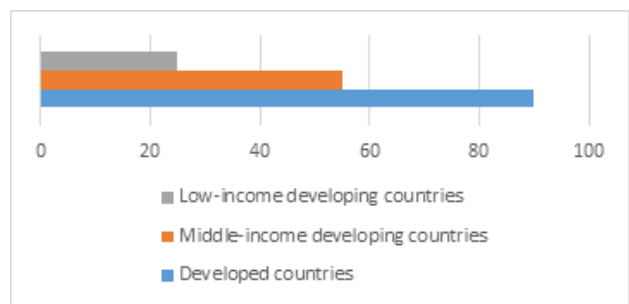


Figure 3 Ecosystem maturity by region

In contrast, emerging markets hold strong growth potential, driven by expanding mobile connectivity and increasing demand for accessible banking services. (Nandy et al. 2025). However, these markets often face challenges such as regulatory uncertainty, limited infrastructure and differences in digital readiness. Emerging markets, while still in their early stages, have the opportunity to improve traditional banking models by implementing mobile-first and digital platform solutions.

Future Trends in Banking Ecosystems

Several important trends are expected to shape the future of the banking ecosystem.

Table 3 Key future trends and their impact

Trend	Description	Expected Impact
DeFi	Decentralized financial services	Reduced intermediaries
Platformization	Banking as a platform	Diversity, Convenience
AI-driven banking	Autonomous decision-making	Increased efficiency
Cross-industry ecosystems	Integration with other sectors	New business models

The most significant is the rise of decentralized finance (DeFi). Using blockchain technology, DeFi enables peer-to-peer financial transactions without the need for traditional financial institutions. It has the potential to change traditional banking models and reshape the role of financial institutions. Another important trend is the integration of banking services into digital platforms. Banking functions are becoming part of larger digital platforms and are offered as modular services. At the same time, advances in artificial intelligence are supporting the development of autonomous banking systems. These systems can make financial decisions in real time with minimal human intervention (Polireddi 2024).

Finally, the emergence of cross-sector ecosystems is becoming an important trend. These ecosystems bring together finance, e-commerce, telecommunications and mobile technologies. This represents a major shift towards integrated value creation. By moving beyond traditional structures and offering a broader range of services, these ecosystems can improve customer engagement and create new revenue opportunities (Table 3).

DISCUSSION

The findings of this study show that the transition to a digital financial ecosystem is not just a technological change. It is also a major transformation of banking operations. As banking services become part of broader digital platforms, banks, regulators and market participants need to rethink their roles, strategies and interactions. This section discusses the practical implications of these findings. It also provides recommendations for main participants.

Recommendations for Banks

The findings suggest that banks need to adopt comprehensive and forward-looking digital strategies to remain competitive in this ecosystem. These strategies should not only focus on digitizing existing services. They should also support the development of platform-based business models. This includes investing in scalable digital infrastructure, improving data analytics capabilities and increasing organizational agility (He et al. 2023). Banks should focus on customer-centric innovation and use data to deliver personalized and relevant services. In addition, digital strategies should be aligned with long-term business objectives. This is essential for creating sustainable value.

Another important recommendation is for banks to establish strategic partnerships with fintech companies. Banks should work with fintech firms rather than treating them as competitors. These partnerships can help banks gain access to new technologies, accelerate product development and expand their service offerings. Partnerships can take a variety of forms, including joint ventures, API integration and innovation labs (Ryan and Mukherjee 2026). By taking an active role in the digital ecosystem, banks can strengthen their market position. They can also strengthen their role as primary players.

Recommendations for Regulators

As the digital financial ecosystem continues to evolve, regulators need to take a flexible and forward-looking approach. A main priority is to create and implement a strong open banking framework. This framework fosters competition and innovation. It enables secure data sharing between financial institutions and third-party providers through standardized APIs. Effective open banking policies can support ecosystem growth while ensuring fair competition among all participants (Tsai et al. 2024).

At the same time, data protection and privacy policies need to be strengthened. This is necessary because the amount and sensitivity of customer data in the digital ecosystem continues to grow. Regulators should set clear rules regarding data ownership, consent management and cross-border data sharing. Enforcing these rules is essential to maintain customer trust and protect the stability of the financial system. Furthermore, regulatory testing environments and innovation-friendly policies can encourage experimentation. They can also help reduce systemic risks.

Impact on Customers and Businesses

The shift to ecosystem-based banking has a major impact on both customers and businesses. For customers, the integration of banking services into digital ecosystems provides greater convenience, more personalized experiences and broader access to financial products. However, concerns about privacy, security and transparency are also growing. These issues require careful monitoring by both service providers and regulators (Wang 2025). For businesses, especially SMEs, the digital financial ecosystem creates new opportunities. This improves access to financing, payment solutions and other supporting services. Integrating financial products

with business platforms can improve operational efficiency and support faster growth. However, intense competition and greater reliance on digital platforms also create strategic challenges. Businesses need to adapt to a rapidly changing market environment (Said *et al.* 2026). Overall, this discussion emphasized that the success of the digital financial ecosystem depends on collaboration between banks, regulators and market participants. A balanced approach, promoting innovation while ensuring safety, security and inclusion, will be essential to guide the future development of the banking sector.

Comparison with Previous Studies

The results are generally consistent with previous research that shows that digital banking ecosystems increasingly rely on platform-based business models and strategic partnerships between financial and non-financial institutions (Ghosh and Golder 2026). Similar to (Ryan and Mukherjee 2026), this study confirms that participation in digital ecosystems improves financial inclusion. It does so by increasing access to digital financial services. However, this study adds to previous research by showing that technological capabilities alone are not sufficient for successful ecosystem participation. Strong governance, strategic partnerships and customer trust are also important factors for ecosystem success. This finding supports the work of (Akyildirim *et al.* 2025), who focused primarily on regulatory issues. It also shows how governance, innovation and customer value creation work together. Furthermore, unlike previous conceptual studies that examined digital banking technologies in isolation, this study integrates various technological and organizational factors into a single framework. This framework explains how ecosystem participants work together to create sustainable competitive advantage.

Limitations and Future Research

This study has several limitations. First, the analysis uses secondary data mainly from academic publications and publicly available case studies. As a result, the proposed conceptual framework has not yet been tested with primary data collected from banking professionals or customers. Second, the selected case studies mainly focus on large international financial institutions with advanced digital capabilities. Therefore, the findings may not fully reflect the situation of smaller banks or institutions in developing countries. Third, digital financial ecosystems continue to change rapidly. New technologies and regulatory developments may affect ecosystem structures beyond the scope of this study. Future research should test the proposed framework using expert surveys, Delphi studies, structural equation modeling or multiple case study analysis. Comparative studies between developed and developing countries may provide a better understanding of ecosystem maturity and institutional differences. Longitudinal studies can also examine how banking ecosystems change over time. They can examine how ecosystem participation affects bank performance, customer satisfaction and financial stability.

CONCLUSION

This study examined the transformation of banking services in the digital financial ecosystem. It demonstrated the significant impact of digital technologies and platform-based models on the banking sector. The findings show that banking is moving from a product and institution centric model to a customer and ecosystem centric approach. Technologies such as artificial intelligence, blockchain, cloud computing and open banking APIs are playing an important role in this transformation. In addition, ecosystem-based banking

offers many advantages. These include better customer service, higher profitability, broader financial inclusion and faster innovation. However, these advantages are accompanied by major challenges, including security risks, data protection issues, regulatory complexity and stronger competition from technology companies.

From a theoretical perspective, this study contributes to existing research by providing a comprehensive analytical framework for the digital financial ecosystem. It combines ideas from platform theory, diffusion of innovation and dynamic capabilities theory. The study also extends previous research by emphasizing the strategic role of banks. It highlights the importance of collaboration and technological adaptation in a connected environment involving multiple participants. From a practical perspective, this study provides banks and regulators with useful strategies for digitalization, ecosystem participation and effective governance. It also offers concrete recommendations. Future research should continue to examine the long-term impacts of banking ecosystems on financial stability, competition and customer behavior. More research is also needed on the development of digital financial ecosystems in developing countries. Further research should examine the regulatory frameworks needed to balance innovation and risk management. Such research will be essential for improving academic knowledge and supporting practical applications in a continuously changing digital environment.

Ethical standard

The authors have no relevant financial or non-financial interests to disclose.

Availability of data and material

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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